STATE OF COLORADO

Bill Ritter, Jr., Governor
James B. Martin, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
Denver, Colorado 80246-1530
Phone (303) 692-2000
TDD Line (303) 691-7700
Located in Glendale, Colorado

http://www.cdphe.state.co.us

Laboratory Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090

Colorado Department
of Public Health
and Environment

November 18, 2008

Greg Goodell
The Heifer Authority, LLC
8215 W. 20th Street
Greeley, Colorado 80634

Certified Mail Number: 7005 1820 0000 3207 2669

RE: Expedited Settlement Agreement, Number: EC-081117-2

Dear Mr. Goodell:

Enclosed for your records you will find The Heifer Authority, LLC's copy of the recently executed Expedited Settlement Agreement ("ESA"). Please be advised that the first page of the ESA was changed in order to place the correct ESA Number on the final document. The ESA is now fully enforceable and constitutes a final agency action.

As specified in the enclosed ESA, The Heifer Authority, LLC must, within fifteen (15) calendar days, submit a certified or cashier's check for the amount specified in the ESA to the Water Quality Control Division in order for this matter to be resolved.

If you have any questions, please don't hesitate to contact Kelly Morgan at (303) 692-3634 or by electronic mail at kelly.morgan@state.co.us.

Sincerely,

Kristi-Raye Beaudin

Kristi-Raye Beaudin, Legal Assistant
Water Quality Protection Section
WATER QUALITY CONTROL DIVISION

cc: Weld County Department of Public Health and Environment

ec: Aaron Urdiales, EPA Region VIII
Ron Jepson, Environmental Agriculture Program, CDPHE

Enclosure(s)

Colorado Department of Public Health & Environment

EXPEDITED SETTLEMENT AGREEMENT

Number: EC-081117-2

The Colorado Department of Public Health and Environment (the "Department"), through the Water Quality Control Division (the "Division"), issues this Expedited Settlement Agreement ("ESA"), pursuant to the Division's authority under §§25-8-602 and 25-8-605, C.R.S. of the Colorado Water Quality Control Act (the "Act") §§25-8-101 to 703, C.R.S., and its implementing regulations, with the express consent of The Heifer Authority, LLC. The Division and The Heifer Authority, LLC may be referred to collectively as "the Parties."

1. The Heifer Authority, LLC ("The Heifer Authority") is a "person" as defined under the Water Quality Control Act, §25-8-103(13), C.R.S. and 5 CCR 1002-81, §81.3(20).

2. The Heifer Authority operates a Concentrated Animal Feeding Operation ("CAFO") as defined by 5 CCR 1002-81, §81.3(4) in the vicinity of 5025 East County Road 82, in Weld County, Colorado.

3. Pursuant to 5 CCR 1002-81, §81.5(2)(b), CAFO operators shall have available documentation prepared by a professional engineer, registered in Colorado, certifying that the impoundment liner provisions of 5 CCR 1002-81, §81.5(2) have been met, and stating what constitutes each constructed liner (e.g., synthetic, clay). For impoundments constructed prior to June 30, 2004, such documentation shall be available no later than April 13, 2006. *(See Attachment A)*

4. In documentation provided to the Department by The Heifer Authority, dated June 5, 2008, The Heifer Authority advised the Department that it did not have documentation prepared by a professional engineer certifying that the facility's impoundments meet the seepage rate standards of 5 CCR 1002-81, §81.5(2). The Heifer Authority's failure to maintain such documentation constitutes violation(s) of 5 CCR 1002-81, §81.5(2)(B). *(See Attachment B)*

5. Pursuant to 5 CCR 1002-81, §81.5(3), CAFO operators shall submit to the Division for approval, by no later than December 31, 2004, a Standard Operating Procedure ("SOP") that demonstrates how manure, including sludge, will be removed such that the liner integrity of impoundments is not damaged. The SOP also shall indicate the expected frequency with which manure will be removed from impoundments. *(See Attachment A)*

6. Department records establish that The Heifer Authority has not submitted its impoundment SOP to the Division in violation of 5 CCR 1002-81, §81.5(3).

7. The parties enter into this ESA in order to outline an enforceable compliance schedule to resolve the violations identified herein and to resolve the matter of civil penalties associated with the alleged violations for a civil penalty in the amount of six thousand dollars ($6,000.00).

8. The Heifer Authority agrees to submit to the Department within two hundred and ten (210) calendar days of receipt of the final signed ESA documentation prepared by a professional engineer, registered in Colorado, certifying that the impoundment liner provisions of 5 CCR 1002-81, §81.5(2) have been met, and stating what constitutes each constructed liner (e.g., synthetic, clay). The Heifer Authority further agrees to submit to the Department within two hundred and ten (210) calendar days of receipt of the final signed ESA a Standard Operating Procedure, developed in accordance with 5 CCR 1002-81, §81.5(3), that demonstrates how manure, including sludge, will be removed such that the liner integrity of its impoundments is not damaged. *(See Attachment C, SOP Examples)*

9. By accepting this ESA, The Heifer Authority neither admits nor denies the violation specified herein.

10. The Heifer Authority agrees to the terms and conditions of this ESA. The Heifer Authority agrees that this ESA constitutes a notice of alleged violation and an order issued pursuant to §§25-8-602 and 25-8-605, C.R.S., and is an enforceable requirement of the Act. By signing the ESA, The Heifer Authority waives: (1) the right to contest the finding(s) specified herein; and (2) the opportunity for a public hearing pursuant to §25-8-603, C.R.S.

11. This ESA is subject to the Division's "Public Notification of Administrative Enforcement Actions Policy," which includes a thirty-day public comment period. The Division and The Heifer Authority each reserve the right to withdraw consent to this ESA if comments received during the thirty-day period result in any proposed modification to the ESA.

12. This ESA constitutes a final agency order or action upon the date when the Department's Executive Director or his designee signs the ESA and effectively imposes the civil penalty.

13. Nothing in this ESA shall preclude the Department from imposing additional requirements in the event that new information is discovered that indicates such requirements are necessary to protect human health or the environment.

14. The Heifer Authority agrees that, within fifteen (15) calendar days of receiving the signed and final ESA from the Division, The Heifer Authority shall submit a certified or cashier's check drawn to the order of the "Colorado Department of Public Health and Environment," for the civil penalty amount specified in paragraph 7 above, to:

    Ms. Kelly Morgan
    Colorado Department of Public Health and Environment
    Water Quality Control Division
    Mail Code: WQCD-CADM-B2
    4300 Cherry Creek Drive South
    Denver, Colorado 80246-1530

15. Notwithstanding paragraph 9 above, the violations described in this ESA will constitute part of The Heifer Authority's compliance history for purposes where such history is relevant. This includes considering the violations described above in assessing a penalty for any subsequent violations against The Heifer Authority. The Heifer Authority agrees not to challenge the use of the cited violations for any such purpose.

16. This ESA, when final, is binding upon The Heifer Authority and its corporate subsidiaries or parents, their officers, directors, employees, successors in interest, and assigns. The undersigned warrant that they are authorized to legally bind their respective principals to this ESA.

ACCEPTED BY THE HEIFER AUTHORITY, LLC:

Gregory M. Goodell Date: 7.21.08
Signature

Gregory M. Goodell Title: Partner
Name (printed)

FOR THE COLORADO DEPARTMENT OF PUBLIC HEALTH & ENVIRONMENT:

Lori M Gerzina Date: 11/17/08
Lori M. Gerzina, Section Manager
Compliance Assurance and Data Management Section
WATER QUALITY CONTROL DIVISION

Attachment A

Excerpt from Animal Feeding Operations Control Regulation 81 (5 CCR 1002-81)

81.5 GROUND WATER PROTECTION REQUIREMENTS - CONCENTRATED ANIMAL FEEDING OPERATIONS

(1) Tanks at concentrated animal feeding operations shall be operated and maintained so as not to discharge wastewater to ground water.

(2) Impoundment liners

(a) An impoundment at a concentrated animal feeding operation shall be constructed and maintained to comply with one of the following standards, as applicable:

(i) The seepage rate from an impoundment shall not exceed 1 x 10-6 cm/sec; or

(ii) Where approved by the Division for an impoundment with an earthen liner, the seepage rate from the impoundment shall not exceed 7.35 x 10-6 cm/sec. The operator of the impoundment shall submit to the Division a request that the impoundment be approved to meet this seepage standard. Such a request shall include, but not be limited to, information documenting that only open-lot wastewater will be diverted to the impoundment, that the impoundment is not designed as an evaporation impoundment, and that the ten (10) foot soil depth zone immediately beneath the impoundment has a cation exchange capacity of at least 15 meq/100 g of soil. Demonstration of compliance with the cation exchange capacity criteria requires the following:

(I) At least seven soil samples shall be acquired from below the entire surface area of the impoundment and analyzed for cation exchange capacity.

(II) The soil samples shall be reasonably equidistant from each other, with five locations being within ten feet of, and downslope of, the two-foot freeboard elevation of the impoundment, and two locations from the middle of the impoundment.

(III) The operator shall have available a map of the impoundment and soil sampling locations.

(IV) Where soil samples were taken below existing impoundments, the operator shall have available documentation from a professional engineer registered in the State of Colorado of how the core locations were sealed to meet a 1 x 10-6 cm/sec maximum seepage rate.

(b) CAFO operators shall have available documentation prepared by a professional engineer registered in Colorado certifying that the provisions of section 81.5(2) have been met, and stating what constitutes each constructed liner (e.g., synthetic, clay). For impoundments constructed prior to June 30, 2004, such documentation shall be available no later than April 13, 2006. For any impoundment constructed by an operator on or after June 30, 2004 such documentation shall be available at least 30 days prior to wastewater entering the impoundment. Copies of such documentation shall be made available to the Division or its designee, upon request.

(c) A CAFO operator shall visually inspect the exposed liner of an earthen impoundment weekly to identify physical changes or deficiencies that may affect the integrity of the liner. Such deficiencies and physical changes shall be corrected within thirty (30) days of having been identified.

(i) The operator shall record the date of the inspection, deficiencies identified, corrective actions taken, and dates that corrective action was completed.

Attachment A

Excerpt from Animal Feeding Operations Control Regulation 81 (5 CCR 1002-81)

(ii) Deficiencies not corrected within 30 days shall be accompanied by an explanation of the factors preventing completion of corrective actions within this time period.

(iii) The records shall be maintained on-site for five years from the date of creation and shall be made available to the Division upon request.

(3) Removal of manure or wastewater from an impoundment shall be accomplished in a manner that does not damage the integrity of the liner. The operator shall submit to the Division for approval a Standard Operating Procedure ("SOP") that demonstrates how manure, including sludge, will be removed such that the liner integrity of impoundments is not damaged. The SOP also shall indicate the expected frequency with which manure will be removed from impoundments.

(a) The operator shall follow the approved SOP whenever manure, including sludge, is removed. Where the SOP was not followed, the Division may require that the operator make the liner available for inspection. Where the Division has just cause as a result of the inspection, the Division may require re-certification of the liner.

(b) An existing CAFO shall submit the SOP no later than December 31, 2004. A new CAFO shall submit the SOP no later than 120 days after animals are place on the production area.

(c) The operator shall certify after each manure or sludge removal event that the manure or sludge was removed in accordance with the approved SOP.

(d) The certifications and approved SOP must be available on-site and be submitted to the Division upon request.

(e) Where the SOP is not followed the operator shall provide notice to the Division within 30 days of the date of manure removal.

(4) Any depth marker in an impoundment shall be installed in a manner that maintains the integrity of the liner and maintains the required seepage rate standard.

(5) Earthen Wastewater Conveyance Structures - Earthen conveyance structures shall be maintained to minimize ponding of wastewater. In addition, such structures shall be constructed and maintained as follows for the purpose of limiting seepage of wastewater in the structures:

(a) Conveyance structures that carry open-lot wastewater

(i) Where constructed in soils that have 35-60 percent gravel, a conveyance structure shall be constructed by sufficiently compacting the existing soil material (less than 60 percent gravel) in place with at least two passes of rubber-tired construction equipment, four passes of track-type equipment, or equivalent, over the entire surface of the conveyance structure. Moisture content of the soil material during compaction shall be maintained to promote sufficient compaction of the in-place materials. The soil should be wet to the touch and leave a stain on the hand when squeezed.

(ii) Where constructed in soils that have greater than 60 percent gravel, or in loamy sand or sandy soils with greater than 35 percent gravel, a conveyance structure shall be constructed by placing a compacted liner over the entire surface of the conveyance structure. A conveyance structure liner shall be constructed of soils having less than 60 percent gravel, shall be twelve (12) inches thick, and shall be compacted with at

least two passes of rubber-tired construction equipment, four passes of track-type equipment, or equivalent, over the entire surface of the conveyance structure. Moisture content of the soil material during compaction shall be maintained to promote sufficient compaction of the soil liner material. The soil should be wet to the touch and leave a stain on the hand when squeezed. In addition, the constructed liner shall be maintained to retain these standards.

(iii) Where constructed in soils having less than 35 percent gravel, a conveyance structure does not need to be lined or compacted.

(b) Conveyance structures that carry process-generated wastewater intermittently (greater than 48 hours between conveyance events) – Earthen conveyance structures that carry process-generated wastewater intermittently shall be constructed and maintained in accordance with the standards specified in section 81.5(a)(ii), above.

(c) Conveyance structures that carry process-generated wastewater non-intermittently (48 hours or less between conveyance events) – Earthen and non-earthen (e.g., pipe or concrete) conveyance structures that carry process-generated wastewater non-intermittently shall be constructed and maintained to have a maximum seepage rate of 1 x 10-6 cm/sec.

(d) Where upon inspection the Division has just cause to determine that the required liner is not in place, the Division may require that the operator submit to the Division a certification that the conveyance structure meets the requirements of section 81.5(5)(b) or (c), or 81.5(5)(a)(ii). The certification shall be made by a professional engineer registered in the State of Colorado.

(6) Setbacks for Impoundments – Impoundments of new source CAFOs shall not be located:

(a) For earthen-lined impoundments, where the seasonally high ground water level is located within 20 feet of the soil surface; and

(b) Where the seasonally high ground water level is located within four (4) feet of an impoundment bottom; and

(c) Within 150 feet of a private domestic water supply well or within 300 feet of a community domestic water supply well.

(7) Ground Water Monitoring - Where an impoundment is not in compliance with section 81.5(2), or where the Division determines that an impoundment liner is not being properly maintained, the Division may require the operator to conduct site-specific ground water quality monitoring of, but not limited to, total nitrogen, ammonia-nitrogen, nitrate-nitrogen, and fecal coliform. In making a determination of whether ground water monitoring is required, the Division shall consider all pertinent factors, including but not limited to: whether the impoundment poses a significant potential risk to beneficial uses of ground water, whether there is suspected contamination of ground water attributable to the facility, whether early detection of ground water contamination is essential to protect valuable drinking water sources, and whether there has been a significant failure on the part of the operator to comply with Section 81.5(2), (3), (4), (6), or (7).

(8) Impoundment Closure – A closed facility shall remove manure and wastewater from all impoundments, to the fullest extent practicable, and backfill earthen impoundments with at least five (5) feet of soil within one hundred twenty (120) days of the facility being closed, unless an alternative procedure and timeline is approved by the Division.

ATTACHMENT B

RECEIVED
JUN 10 2008
WATER QUALITY CONTROL DIVISION

Colorado Department of Public Health and Environment

Colorado Department of Public Health and Environment
Environmental Agriculture Program

2007 Compliance Self-Certification for Concentrated Animal Feeding Operations – Regulation No. 81 Liner Certification Requirement

A. Facility Information

The Heifer Authority, LLC
Facility Name

5025 East CR 82, Carr, CO 80612
Facility Physical Address (Street Number, City, State, Zip)

Greg Goodell | Partner | 970-539-5117
Owner/Operator Name (Contact Person) | Contact Person Title | Contact Telephone Number

8215 W. 20th St, Greeley, CO 80634
Contact Mailing Address (Street Number, City, State, Zip)

ggoodell@DairyMD.com | 970-351-8134
Contact Email Address | Contact Fax Number

Has Facility changed any of the following information in the last year? (check all that apply)

Location ☐ Name ☐ Ownership ☐ Operator ☐

Please Provide Updated Information: _____

Type of Animals at Facility:

☐ Mature Dairy Cows	☒ Dairy Heifers	☐ Cattle ☐ Veal Calves
☐ Swine (>55#)	☐ Swine (<55#)	☐ Sheep
☐ Turkeys	☐ Laying Hens	☐ Other Chickens
☐ Other (specify) _____		

Maximum Number of Animals Facility Intends to Stock at any One Time: 4000

B. Compliance Information

Please answer all questions, unless you are guided to skip a question. Do not answer questions that you are guided to skip.

1. Does the facility have tanks[1]? ☐ Yes ☒ No
   [1] "Tank" means a stationary device, designed to contain an accumulation of pollutant-containing water, which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.
   If yes, are they operated and maintained so as not to discharge wastewater to groundwater? ☐ Yes ☐ No

2. Does the operation have an impoundment(s)[2]? ☒ Yes- if yes, how many? 1 ☐ No - if no, skip to question #4.

[2] "Impoundment" means a facility or part of a facility which is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), which is used for storage, treatment, evaporation or discharge of pollutant-containing waters, sludge or associated sediment.

If yes, are they constructed and maintained so that the seepage rate from any impoundment will not exceed 1×10^{-6} cm/sec? ☐ Yes ☐ No – if no, has the facility submitted a request to the Ag Program that the impoundment be approved to meet the alternative seepage rate in Regulation No. 81. ☐ Yes ☐ No Unknown

3. Does the facility have on-site documentation prepared by a professional engineer registered in Colorado certifying that the facility's impoundment(s) meet a regulatory seepage rate and stating what constitutes each constructed liner (e.g., synthetic, clay)? ☐ Yes ☒ No

If an impoundment(s) was constructed on or after June 30, 2004 was the documentation available at least 30 days prior to wastewater entering the impoundment(s)? ☐ Yes ☐ No N/A, constructed before 6/30/04

4. Does the facility plan to or is in the process of constructing any impoundment(s)? ☐ Yes – if yes, date construction will be complete _____. ☒ No – if no and question #2 is "no", skip to Section D, otherwise, continue to question #5.

5. Since July 1, 2004, has the facility visually inspected weekly the exposed liner of its earthen impoundment(s) to identify physical changes or deficiencies that may affect the integrity of the liner(s)? ☐ Yes ☒ No

If yes, have identified deficiencies and physical changes been corrected within 30 days of having been identified unless an explanation of the factors preventing completion of corrective actions within this time period is documented? ☐ Yes ☐ No ☒ Have not, to date, identified any deficiencies or physical changes.

If no, please indicate whether any such inspections have occurred and, if applicable, the frequency with which they were made (other than weekly). ☐ Yes ☐ No Inspection frequency _____.

6. Does the facility keep records on-site of the date of the inspection, deficiencies identified, corrective actions taken, and dates that corrective action was completed? ☐ Yes ☒ No

C. Requirement to Submit Information to the Environmental Agriculture Program

If you answered "yes" for Question #3 above, please provide the documentation certifying that the facility's impoundment(s) meet a regulatory seepage rate and stating what constitutes each constructed liner. Please be aware that the documentation provided must also include supporting information such as how the determination was made that the impoundment met the seepage rate (e.g., Colorado registered professional engineer certification that the seepage rate is met as well as the methodology used for determining the seepage rate). Submit this information to the address in Section E. after completing Section D.

D. Certification Statement

I certify under penalty of law that:

(i) I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this certification statement;

(ii) the information contained in this submittal is to the best of my knowledge, true, accurate, and complete in all respects;

(iii) systems to maintain compliance are in place at the facility and will be maintained from this point forward even if processes or operating procedures are changed; and

(iv) I am fully authorized to make this certification on behalf of this facility.

I am aware that there are significant penalties including, but not limited to, possible fines and imprisonment for willfully submitting false, inaccurate, or incomplete information.

Signature of Owner or Operator

6/5/2008
Date (MM/DD/YYYY)

Gregory M. Goodell
Print Name

Partner
Title

E. Submittal Address

Please return the completed self-certification form within 30 days of receipt to:
Colorado Department of Public Health and Environment
Attention: Erin P. Kress
Environmental Agriculture Program – SP-B2
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

Standard Operating Procedure (SOP) for Removal of Manure and Sludge from Impoundments

Name of Facility: _____ Date: _____

Address: _____

Contact Person: _____ Phone Number: _____

Removal Timing:
Impoundments will be cleaned as needed, depending on runoff and manure and sludge accumulation rates. It is expected that ponds will be cleaned approximately every 10 years.

General Procedures:
1. Manure and sludge removal from ponds will be performed in a manner that does not damage the liner.
2. Progress of manure and sludge removal activities will be monitored daily to ensure that pond liner integrity is not being damaged.
3. Only well-experienced equipment operators will perform pond cleaning activities. Prior to work initiation, the equipment operator will be advised of this SOP and the importance of protecting pond liner integrity.

Specific Procedures (check all that apply):

- ☐ All excavation work will be performed with smooth bladed equipment (i.e. no teeth).
- ☐ Ponds will be dewatered to the extent practicable prior to the initiation of manure and sludge removal activities.
- ☐ A rounded "lip" will be fastened over the cutting edge of the bucket or blade to protect pond liner integrity when cleaning ponds with synthetic or GCL liners. This method will also be employed if needed on clay lined ponds.
- ☐ A _____ inch thick "buffer" will be maintained on top of the liner (i.e. not removed). If no buffer will be maintained, surveying equipment will be used to establish the top of liner.
- ☐ If needed, temporary stakes or poles with depth markings will be placed in the bottom of the pond at strategic locations to aid in identifying the buffer elevation or the top of the liner. Temporary depth markers will not penetrate the pond liner.
- ☐ In ponds where liquid level marker numbers can be easily read from any location in the pond, the marker will serve as the primary guide for identifying the top of the pond liner.
- ☐ In large ponds, the "buffer" elevation or the top of the pond liner will be identified using the pond depth gauge in conjunction with surveying equipment as needed, such as level or transit.
- ☐ The equipment operator will periodically use the rounded edge of the bucket (cutting edge retracted) to gently push through the accumulated manure to the top of the liner to establish depth of accumulated manure. Such activity will not damage the liner.
- ☐ Stakes or poles indicating liquid depth will be placed at strategic locations along the pond side slopes to assist the equipment operator in establishing the depth to the top of the buffer, or the liner.
- ☐ The track hoe or backhoe arm will be marked in 1 foot increments to assist in identifying liquid depth.

- ☐ An agitator pump will be used to remove sludge. Methods that will be used to protect the liner may include keeping the agitator pump suspended _____ inches above the pond liner and/or installing a protective cover over the liner, such as concrete, at the location where the agitator pump will be used.
- ☐ Other procedures as described _____

_____

_____

Other methods that may be used to protect liner integrity but are not mentioned here will be included in an amended SOP and submitted to the WQCD prior to the use of such methods.

All manure removal events will be recorded. If manure removal events have been conducted in accordance with this SOP, _____ will certify in writing that the removal event was in accordance with this approved SOP. All certifications and the approved SOP will be available on-site and will be submitted to the Division upon request.

If this SOP is not followed for a removal event, _____ will provide notice to the state Water Quality Control Division within 30 days of the date of manure removal.

Owner/Operator Signature Date	State WQCD SOP Approval Signature Date

Standard Operating Procedure for Manure/Sludge Removal from Impoundments

Prepared in Accordance with
Colorado Department of Public Health and Environment –
Water Quality Control Commission
Regulation No. 81.5 (3)

Submitted on behalf of:

Facility

Prepared by:

ENVIRO-AG EAF ENGINEERING, INC.

702 Quail Creek Drive
Amarillo, Texas 79124
(806) 353-6123
Fax (806) 353-4132

December 2004

Standard Operating Procedure for Manure/Sludge Removal from Impoundments

This Standard Operating Procedure (SOP) shall apply to all impoundments at Facility located approximately five miles west of City, Colorado in County County, Colorado.

Regulatory Provisions and Discussion

Per Regulation No. 81.5(3)(a), "the operator shall follow the approved SOP whenever manure, including sludge, is removed. Where the SOP was not followed, the Division may require that the operator make the liner available for inspection. Where the Division has just cause as a result of the inspection, the Division may require re-certification of the liner." Facility will follow this SOP for all manure/sludge removal events to ensure liner integrity is maintained during manure/sludge removal events from all impoundments.

Per Regulation No. 81.5(3)(c), "the operator shall certify after each manure or sludge removal event that the manure or sludge was removed in accordance with the approved SOP." Facility will complete a "Manure Removal Certification" form each time manure/sludge is removed and certify that the approved SOP was followed. A blank "Manure Removal Certification" form is included with this SOP.

Per Regulation No. 81.5(3)(d), "the certifications and approved SOP must be available on-site and be submitted to the Division upon request." Facility will maintain a copy of all certifications and the approved SOP in their record keeping files and will submit them to the Division upon request.

Per Regulation No. 81.5(3)(e), "where the SOP is not followed the operator shall provide notice to the Division within 30 days of the date of manure removal." In the event that the SOP is not followed, the Division will be notified within 30 days of the date of the manure/sludge removal event.

Operational Information

The frequency of solids removal from the impoundments is dictated by sludge accumulation depths in each impoundment, however, the frequency is expected to be at least every two years for settling basins and at least every ten years for other impoundments. The depth indicators of the pond markers will be used to monitor sludge levels in the impoundments. These observed depths will be considered by the operator in determining how deep manure/sludge is to be removed from the impoundment. Additionally, the facility will utilize any existing survey data to define the bottom of the manure/sludge layer. During manure/sludge removal, the operator will exercise caution to ensure only manure/sludge is removed and that the liner is not compromised.

Manure Removal Methods

Physical manure/sludge removal generally occurs through the use of an excavator parked either outside of or on the top of the berm of the impoundment. The excavator extends the boom (arm) into the accumulated solids and removes a load. That load is then transferred to a waiting truck that sits along side the excavator. The truck then transfers the solids to the appropriate location.

Alternate methods of manure/sludge removal from the impoundments at Facility include the use of a front end loader that enters the impoundment or a backhoe that is either located outside of or on the top of the berm of the impoundment. Additionally, Facility may elect to utilize agitation and pumping of the manure/sludge directly to waiting trucks. Other methods of manure/sludge removal that may become available will be included in an amended SOP to be submitted to the Division for approval prior to intializing the method.

Liner Integrity Inspection & Maintenance

During removal of manure/sludge through the use of an excavator, the excavator operator shall exercise caution to ensure no "gouging" or damage occurs to the existing liner. The bucket on the excavator shall have no teeth and shall have a smooth edge, preferably retro-fitted with a pipe or rounded edge, to ensure digging into the liner does not occur.

Removal of manure/sludge with a loader-type vehicle that enters the impoundment, may be accomplished without impacting the liner. However, care shall be taken by the operator to minimize any impacts to the liner due to tire activity. The bucket of the loaders shall have no teeth and shall have a smooth edge, preferably retro-fitted with a pipe or rounded edge, to ensure digging through the liner does not occur.

During removal of manure/sludge through agitation, the agitation device (propeller, etc.) and pipe intake shall be monitored to ensure that the mechanical operation does not cause damage to the installed liner. Should a floating agitator be used, its location will be monitored to ensure it does not get too close to the sides to damage the liner on the impoundment sidewalls. Manure/sludge depths will be continually monitored during removal to ensure the agitator's depth does not create the potential for damage to the liner that exists on the bottom of the impoundment.

Should any suspected disturbance occur to the liner as a result of manure/sludge removal events, the facility shall contact a registered professional engineer to inspect the damage and develop any necessary corrective action to repair the damage. It shall be at the engineer's discretion as to what methods, repair work and testing will be required to deem the liner integrity restored. The engineer shall be required to document in writing, the findings of the inspection as well as any follow-up reports, including re-certifications, as required. The engineer shall provide the operator with copies of all reports so that the operator can attach the reports to the Manure Removal Certification form.

Signs of suspected liner disturbance shall include, but is not limited to:

- Sloughing along impoundment sidewalls and bottoms due to mechanical activities from manure/sludge removal,
- Tire ruts or equipment tracks deeper than two inches below the natural (liner) surface of the impoundment sidewalls and bottoms,
- Digging or gouging of the liner with excavator or loader buckets,
- Compromise of liner surfaces due to agitation of solids/sludge.

Manure/Sludge Removal Certification

Beginning Date of Removal:_____

Ending Date of Removal: _____

Manure/sludge removed from which impoundment: _____

Estimated amount of manure/sludge removed (from loads or weigh tickets): _____

Manure/sludge removal was conducted by: ☐ Facility ☐ Contractor

If by contractor, name of contractor: _____

Equipment Used:
Place a check (√) in the appropriate box:

- ☐ Excavator with smooth bucket
- ☐ Excavator with smooth bucket and retro-fitted rounded edge
- ☐ Back hoe with smooth bucket
- ☐ Back hoe with smooth bucket and retro-fitted rounded edge
- ☐ Front end loader with smooth bucket
- ☐ Front end loader with smooth bucket and retro-fitted rounded edge
- ☐ Agitator and pump
- ☐ Other (describe)_____

Was the Standard Operating Procedure for Manure/Sludge Removal from Impoundments followed for this manure/sludge removal event?

☐ Yes

☐ No, Colorado Department of Public Health and Environment must be notified within 30 days of the date of manure/sludge removal that the SOP was not followed.

Note any suspected liner disturbance:

_____

_____

_____

Attach any applicable engineering reports to this certification documenting corrective action to all liner disturbances.

_____ _____

Operator Signature Date

EAF 702 Quail Creek Drive ♦ Amarillo, Texas 79124 ♦ Tel 806/353-6123 ♦ Fax 806/353-4132 ♦

Standard Operating Procedure (SOP)

For Pond Cleaning and Liner Protection

(in accordance with Colorado Regulation No. 81.5.3)

Name of Facility:_____

Address: _____ **Contact:**_____

_____ **Phone:**_____

This standard operating procedure will be followed when any impoundment is cleaned. This form outlines the operational practices of the facility taken to protect the impoundment liner. Fill in the table below with the pond identification; an estimate of length, width, [illegible] on the pond, and the measure taken to protect the pond liner. Select all that apply from [illegible] 2 for liner protection methods that best match your operation and fill the chart with the [illegible] and 2. Use Number 13 for "Other" and explain.

Pond ID or description	[illegible] of [illegible] x [illegible]	Removal Method(s) *(From list 1)*	Liner Protection Method(s) *(From list 2)*	Cleaning Frequency

List 1 – Removal Methods

1. Cleaning not needed *(justify in item 13)*
2. Backhoe / excavator / loader *(circle one)*
3. Biological Treatment
4. Dredging / bucket / suction *(circle one)*
5. Pump w/agitation, w/out agitation *(circle one)*

List 2 – Liner Protection Methods

[illegible] or implement
[illegible] or implement
[illegible] used during pumping
[illegible] during cleaning
[illegible] *item 13, e.g. will remove 50% or to a depth not more than 6" above the liner.)*
11. Experienced Contractor* *(must complete below)*

_____

***Contract Cleaning** – Contractor/Business Name License No. Date

(Experienced Contractor cleaning must also include at least one additional item from List 2)

13. Other *(explain)*_____

_____

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4350 Highway 66, Longmont Colorado 80504

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The facility will identify the top of the lagoon liner by surveying or measuring the depth of the lagoon. The survey or measurements will include the depth of the pond and the slope of the lagoon embankment. The operator can measure the depth of the manure layer using the information included in the survey or site map by measuring the depth of the pond to the top of the manure layer. A copy of the survey or a site map will be kept with the SOP.

If the facility choose[illegible] nure removal, the pipe inlet will be placed at a minimum of six incl[illegible] mation from the site map or survey will provide the operator with the po[illegible] hen measure the length of the pipe and place the inlet appropriately.

A staff gauge will be [illegible] will indicate the top of the lagoon liner. Lagoon gauges will be labele[illegible] st the operator as to where the lagoon liner begins.

If the facility decides [illegible] d SOP will be submitted to the Division for approval 30 days pri[illegible] d. The revised SOP will indicate how the pond will be cleaned in a manner that protects the liner. The structure will not be cleaned until there is written approval from the Division of the amendment to the SOP.

After cleaning each pond the operator will conduct a [illegible] this approved SOP was followed and notify the Division within 30 days [illegible] OP is not followed.

Owner/Operator Signature Date [illegible] val Date

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